

Development of an improved model watershed scale master wetland mitigation strategy for restoration, protection and public projects for local governments.

Demonstrate the effectiveness of local government scale mitigation planning coordinated with future public works projects in achieving the goals of wetland and water quality protection, watershed restoration, and completion of necessary public infrastructure projects.

Project Goals

- Develop an improved model local government watershed scale wetland mitigation strategy for wetland restoration, wetland protection, and water quality improvement and public project mitigation at the local government scale that is transferable to other Florida counties.
- Depending upon the parameters in other States this will likely be transferrable to other local governments in other States that have a governance system similar to the Florida's.

Review of the existing Lee County Mitigation Plan

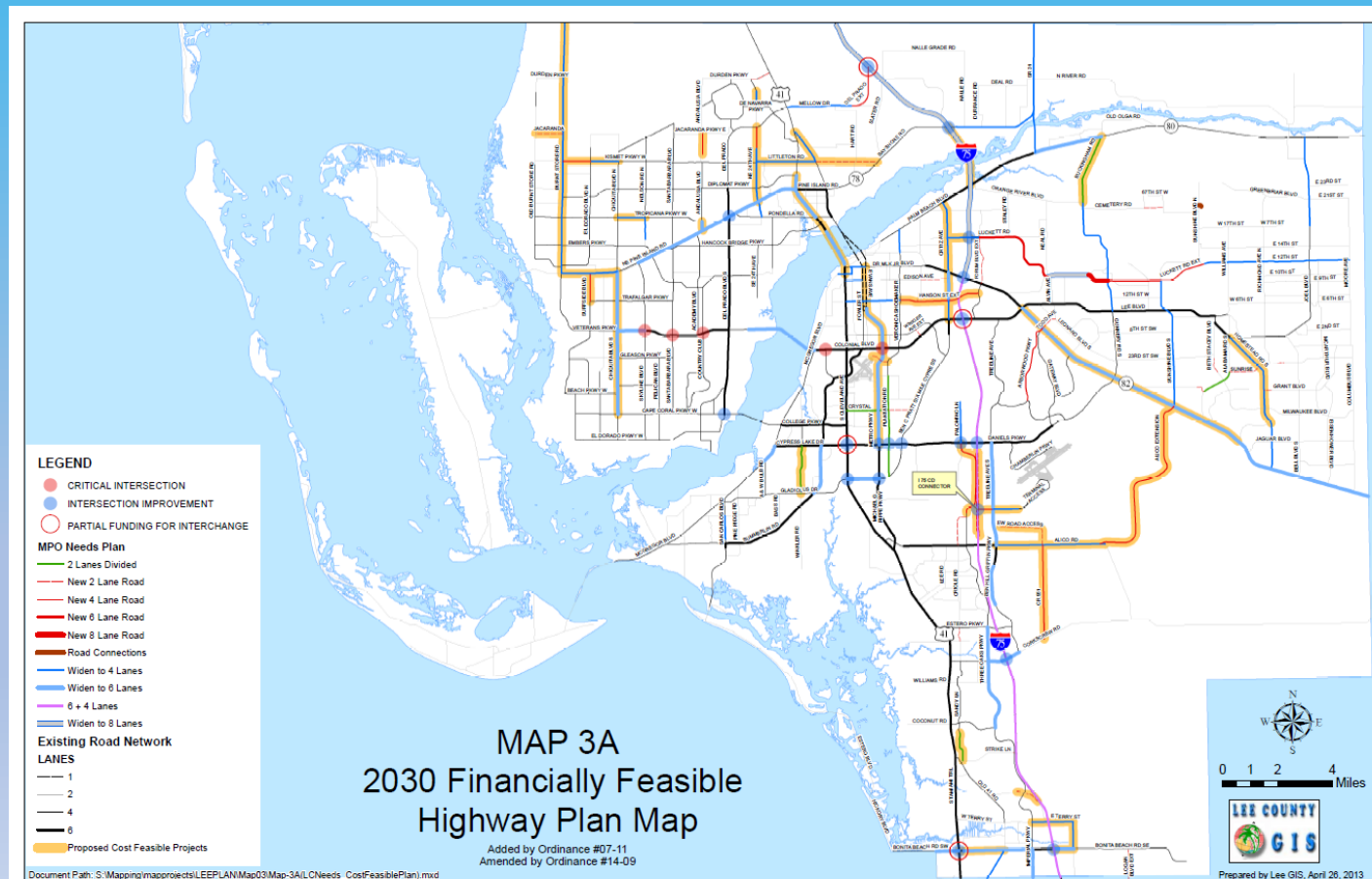
Lee County Master Mitigation Plan
(Environmental Quality Investment and Growth Mitigation Strategic Plan)

May 16, 2007

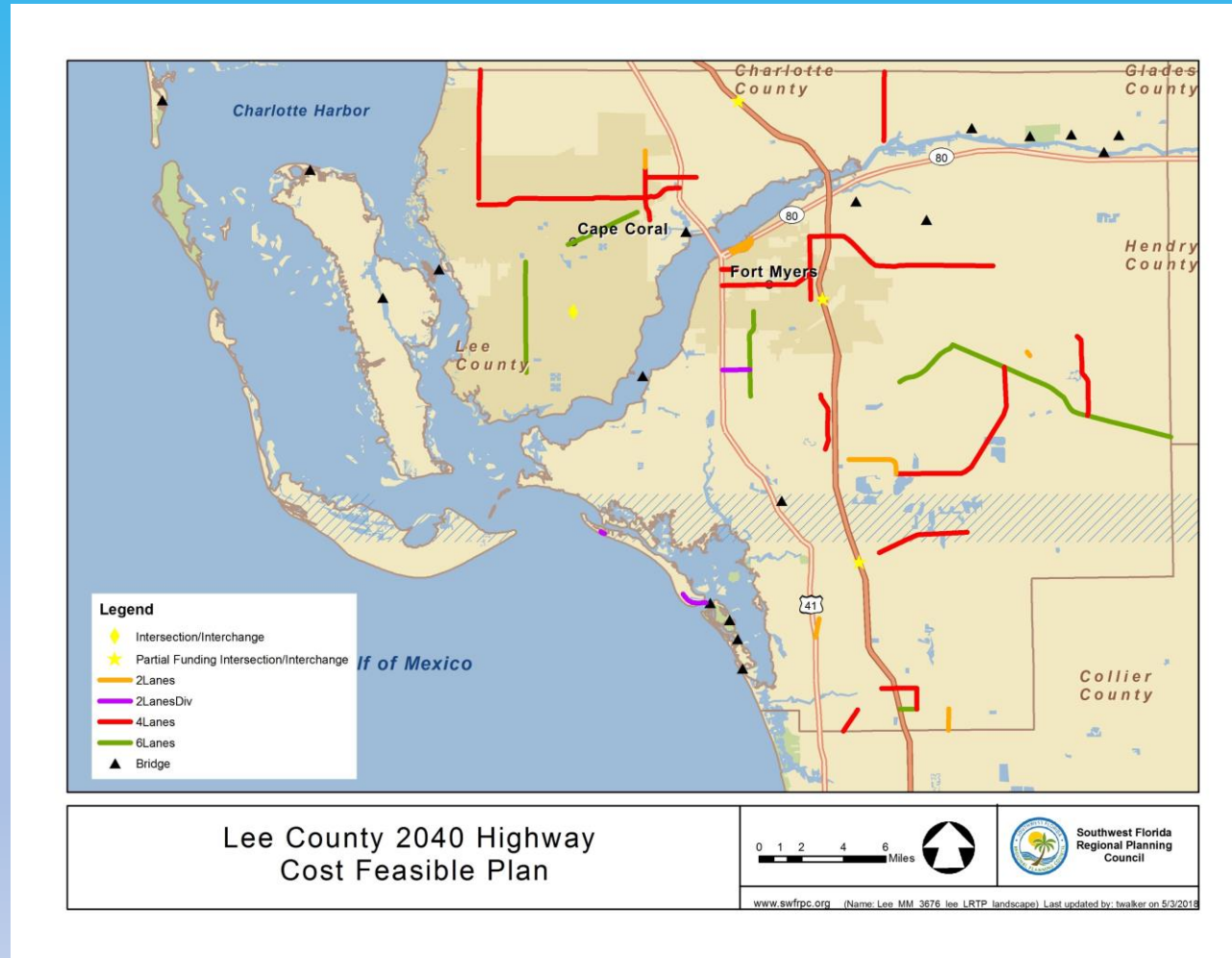
Calculation of the ecosystem services values for the collected mitigation projects using the ECOSERVE total ecosystem services method

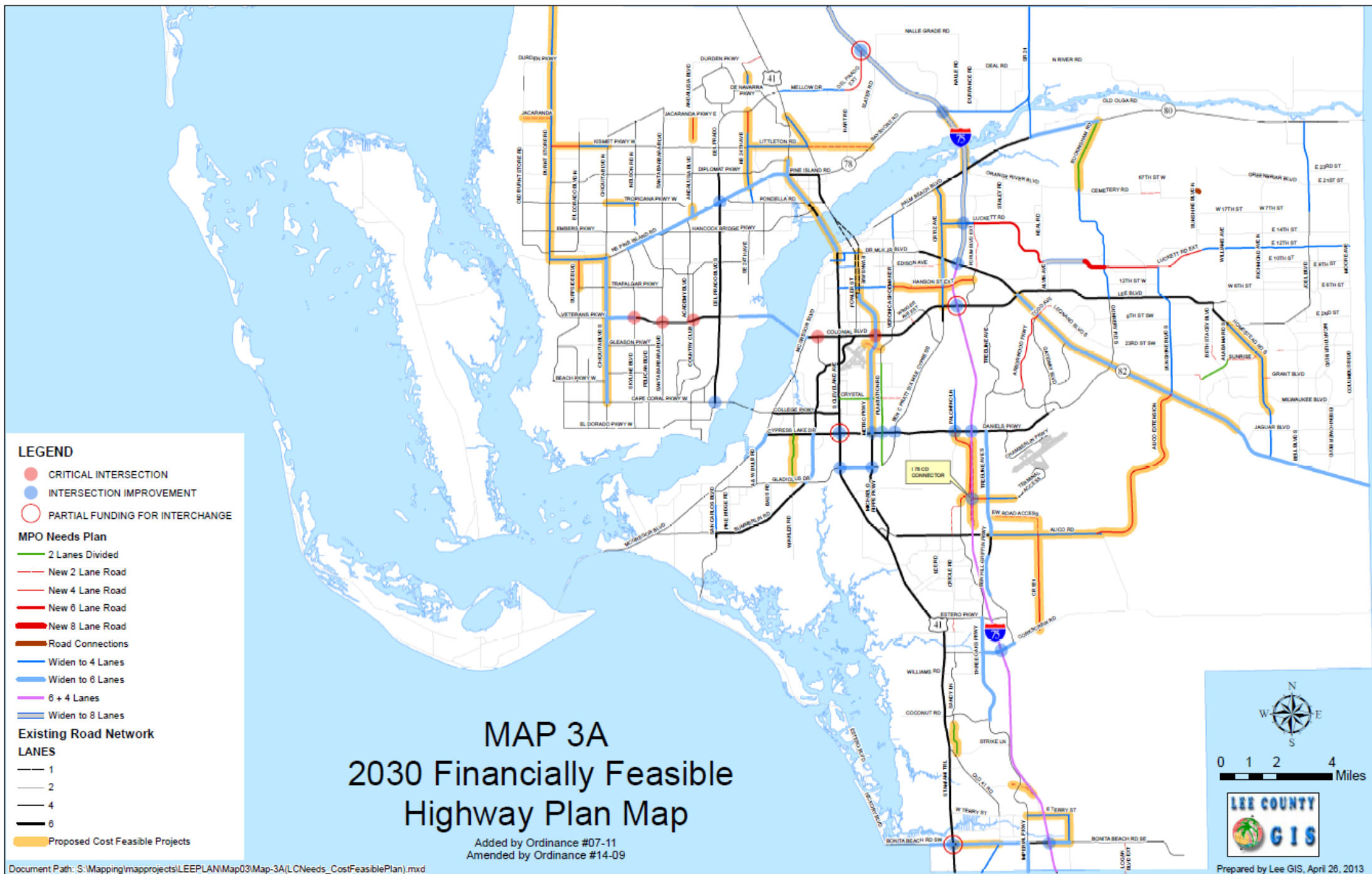
Project	Total Pre-construction Total Ecosystem Services Value (TEV) per year	Total Post-construction TEV per year	Net TEV gain	NET TEV gain/acre
Ten-Mile Filter Marsh Canal	\$111,674.38	\$467,647.38	\$355,973.00	\$12,921.82.
Estero Marsh Preserve	\$141,653.86	\$23,405,013.17	\$23,263,359.30	\$95,353.36
Briarcliff Canal Filter Marsh	\$60,806.70	\$254,634.00	\$193,827.30	\$12,921.82.
Totals	\$314,134.94	\$24,127,294.55	\$23,813,159.30	

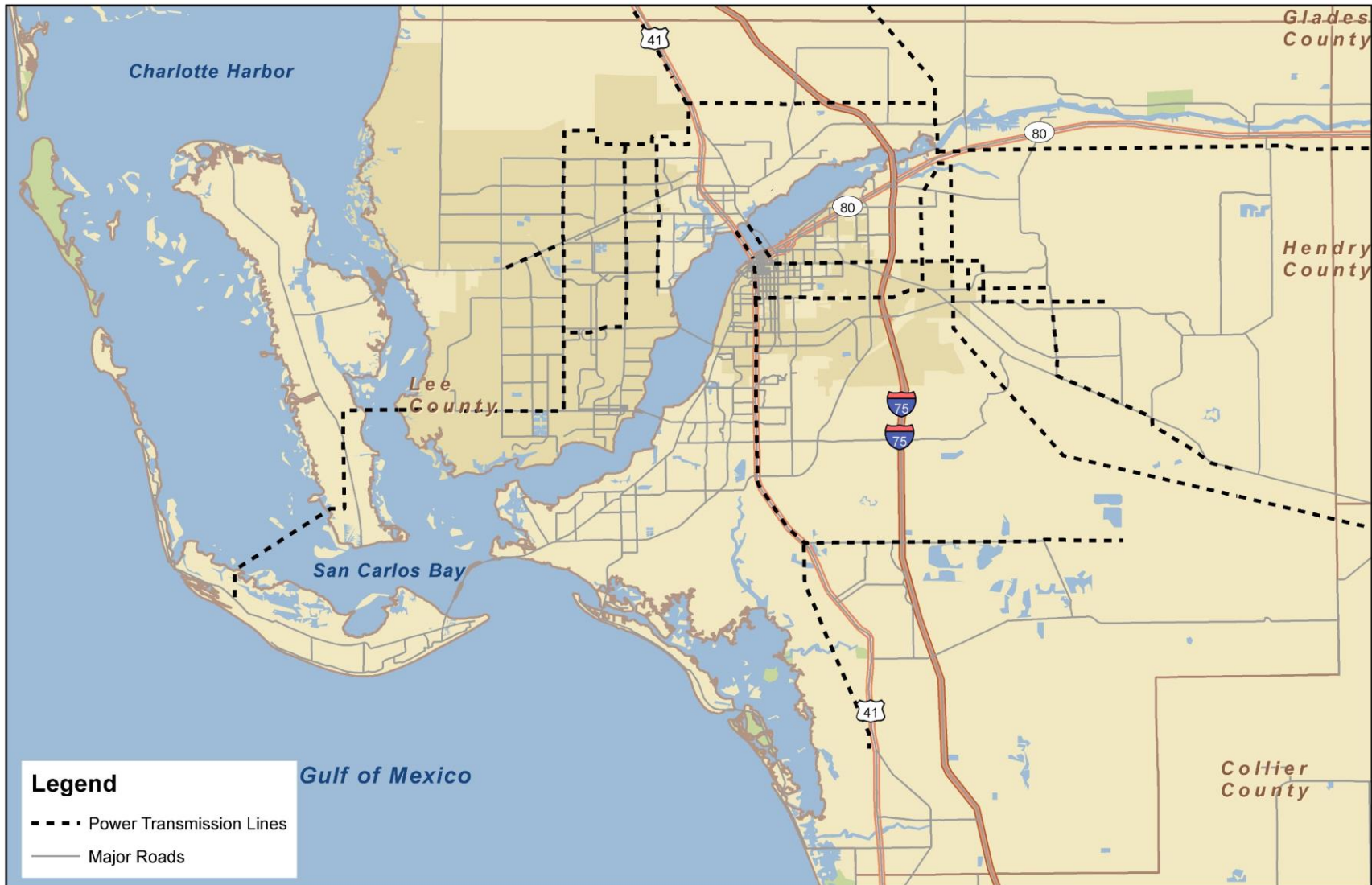
Development of the new list of upcoming public infrastructure projects for the projected planning future with the compatible in watershed mitigation project



Step 1: Collect data on the proposed road, rail, port, airport, public transit, and utilities projects proposed within the plan timeframe







Lee County Power Transmission Lines

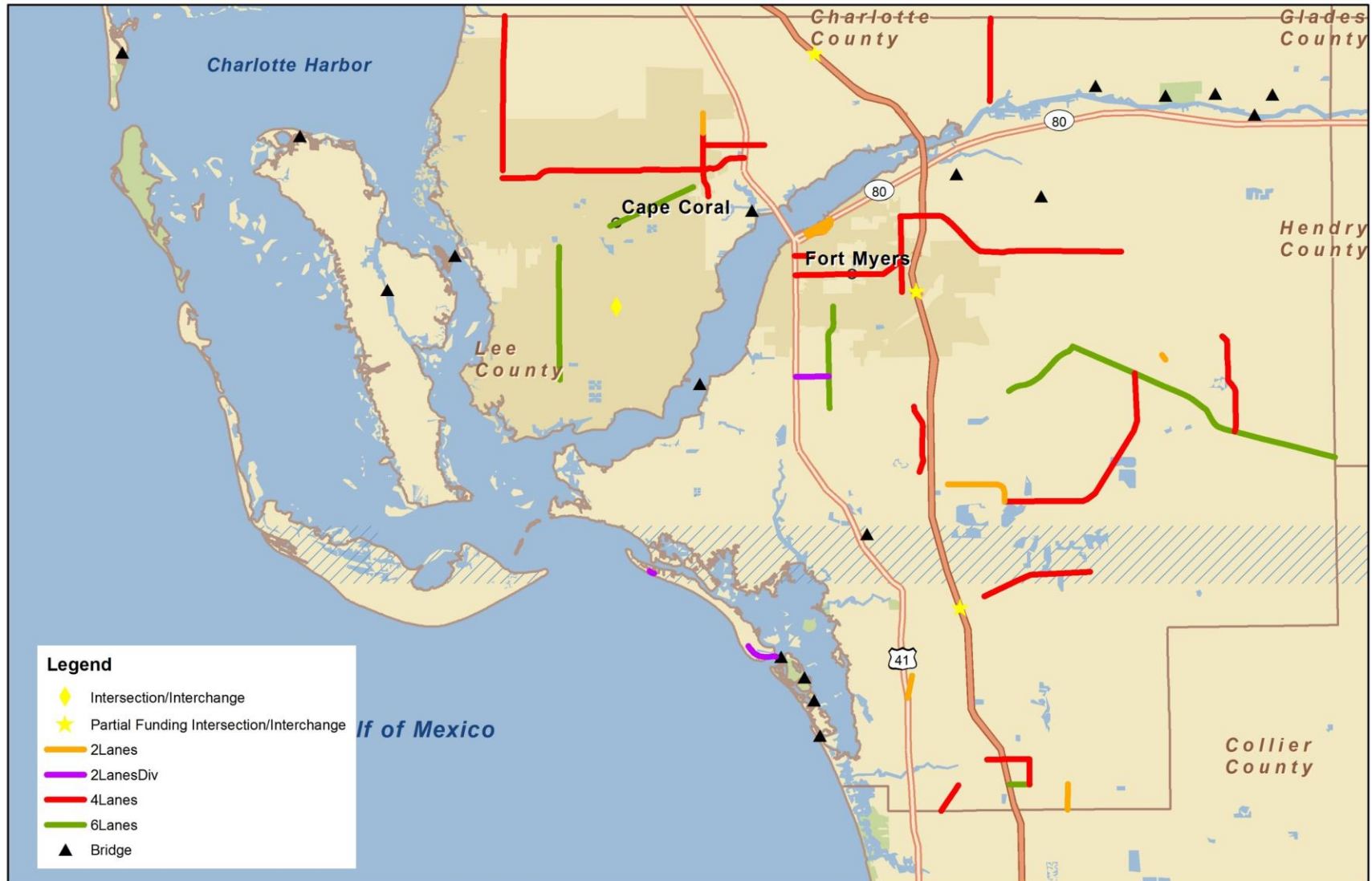
0 2.5 5 Miles



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(Name: Lee MM 3676 powerlines L) Last updated by: twalker on 3/15/2017



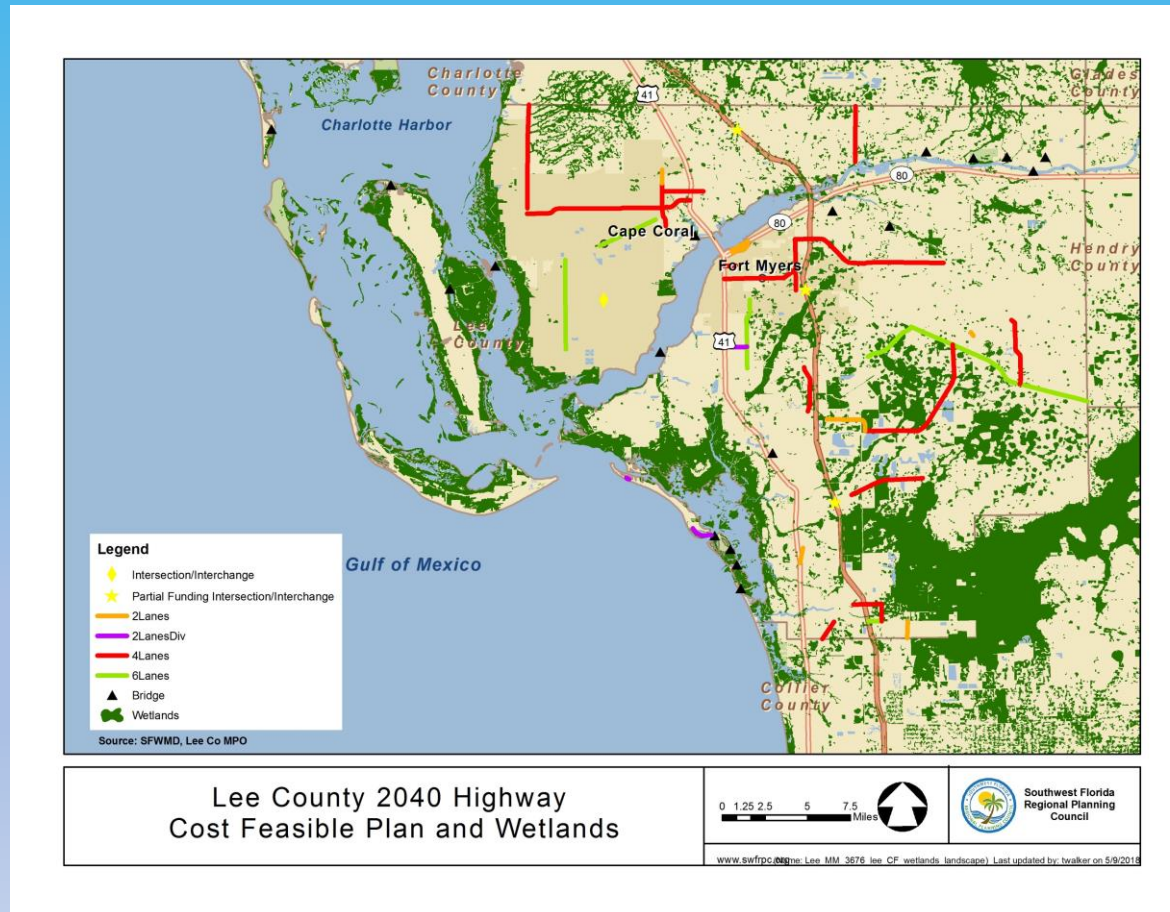
Lee County 2040 Highway Cost Feasible Plan

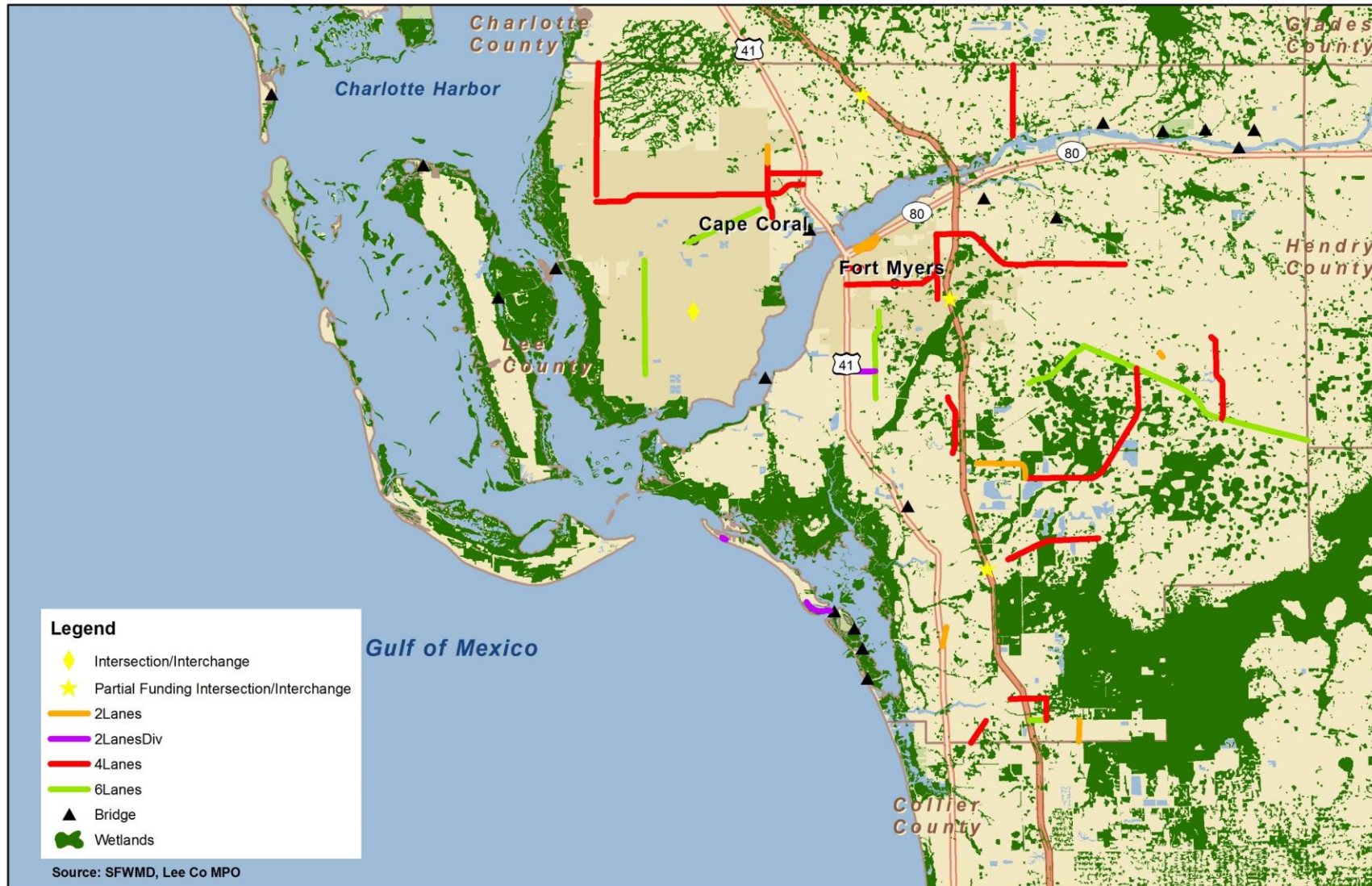
0 1 2 4 6 Miles



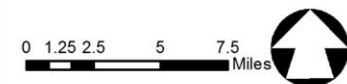
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Step 2: Overlay projects with maps of wetlands, listed species, conservation lands, and conservation easements. (This could also include archeological and cultural features)





Lee County 2040 Highway Cost Feasible Plan and Wetlands

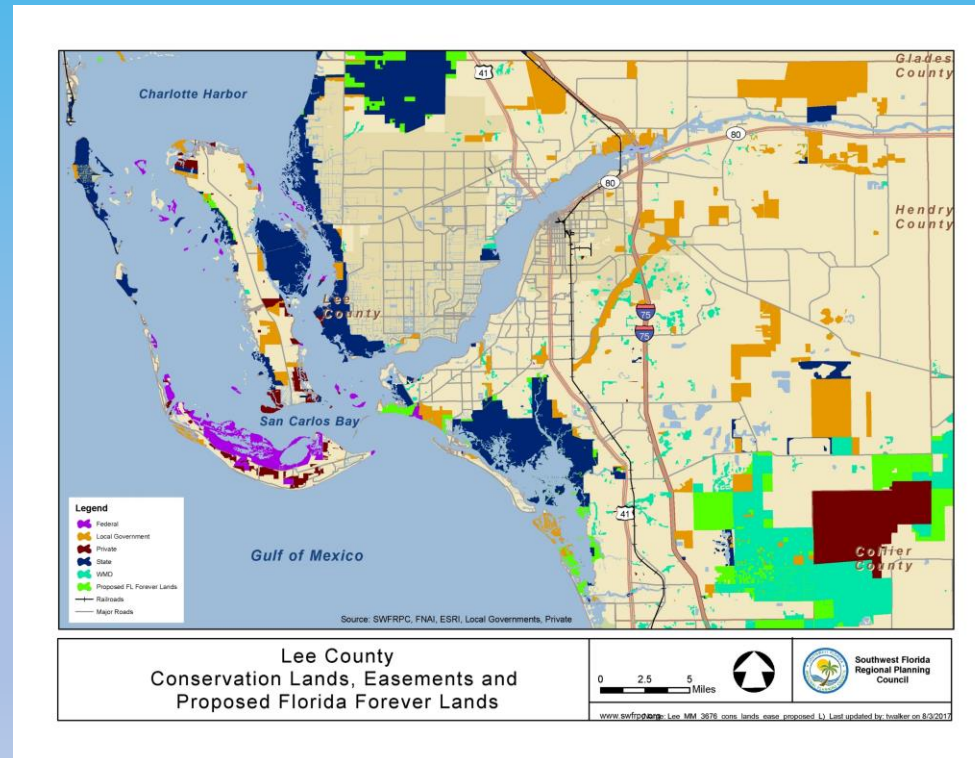


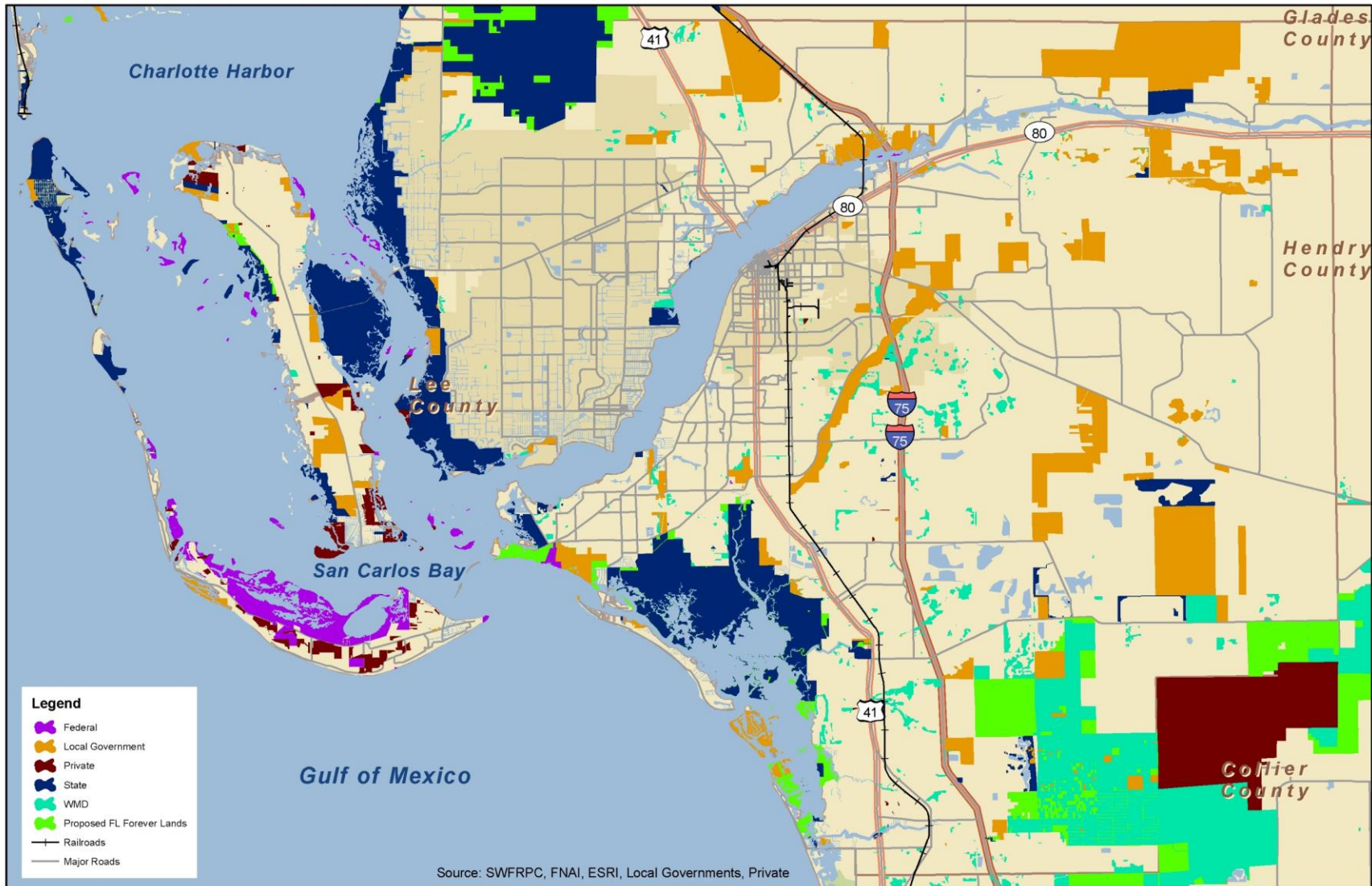
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Step 3: Quantify the intersection of the projects with the wetland resources

ID	Location	Lanes	Length in wetlands (ft)	Size of Lane (ft)	Area (square feet)	Acres of Impact
1	3 Oaks Pkwy Ext	4	2,650.29	68	180,219.84	4.14
2	Alico Green Meadows	4	14,280.90	68	971,101.42	22.29
3	Ben Hill to Alico	2	5,565.65	44	244,888.44	5.62
4	Burnt Store Rd	4	1,078.83	68	73,360.19	1.68
5	Corkscrew Rd	4	5,520.14	68	375,369.28	8.62
6	Diplomat Pkwy	4	54.53	68	3,707.89	0.09
7	E Terry St/Bonita Grande	4	5,246.39	68	356,754.52	8.19
8	Hanson Ext	4	83.52	68	5,679.62	0.13
9	Logan Ext	2	8.13	44	357.73	0.01
10	Luckett Ext	4	3,189.72	68	216,901.04	4.98
11	NE 24th Ave Ext	2	1,124.64	44	49,484.28	1.14
12	Seaboard St	2	540.01	44	23,760.46	0.55
13	SR 82	6	561.49	92	51,656.90	1.19
14	State Road 82	6	2,999.76	92	275,977.85	6.34
	Total					64.95

Step 4: Gather information of the conservation needs of local government, state government, federal government and Non-governmental conservation lands along with available mitigation banks.





Lee County Conservation Lands, Easements and Proposed Florida Forever Lands

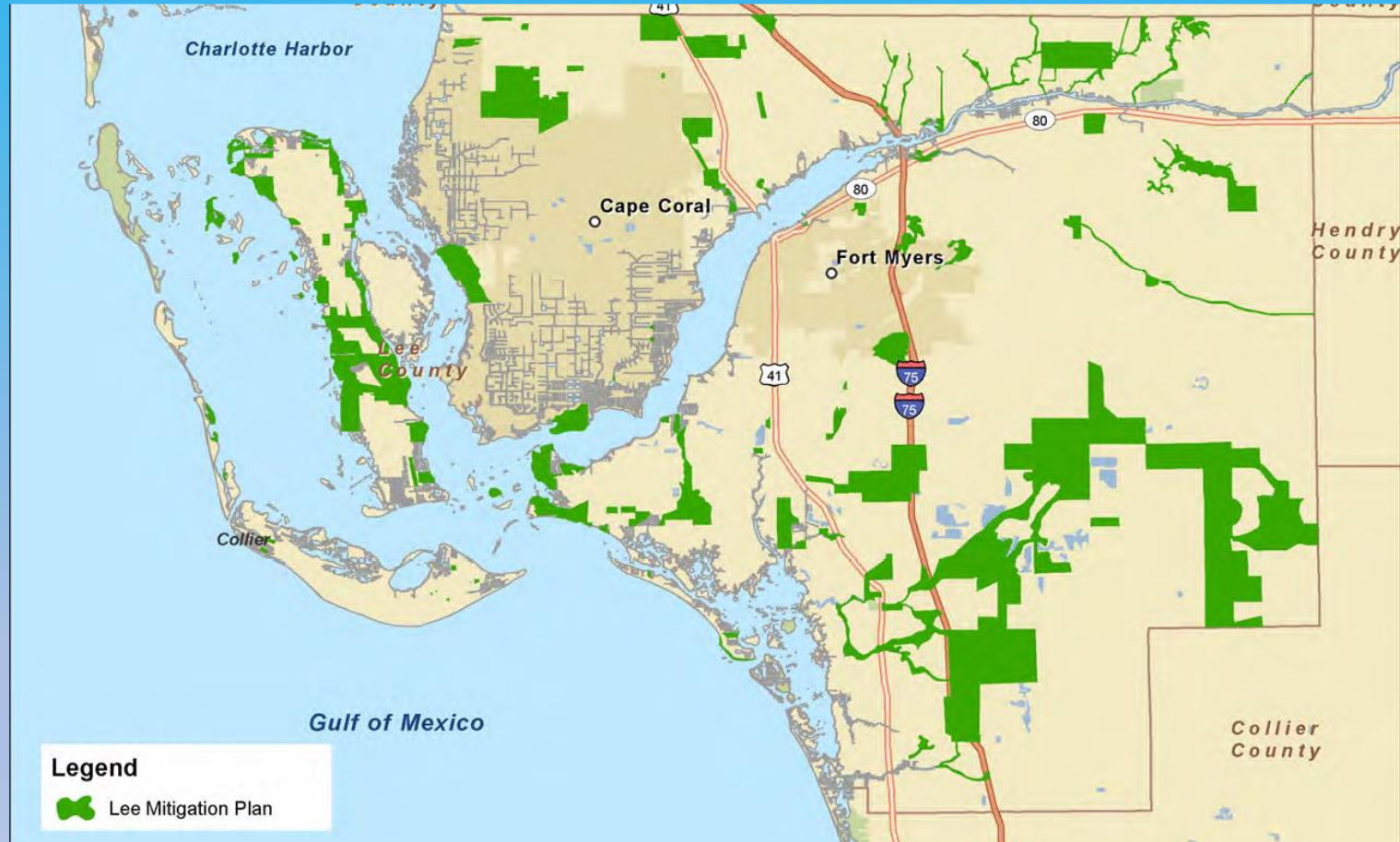
0 2.5 5 Miles



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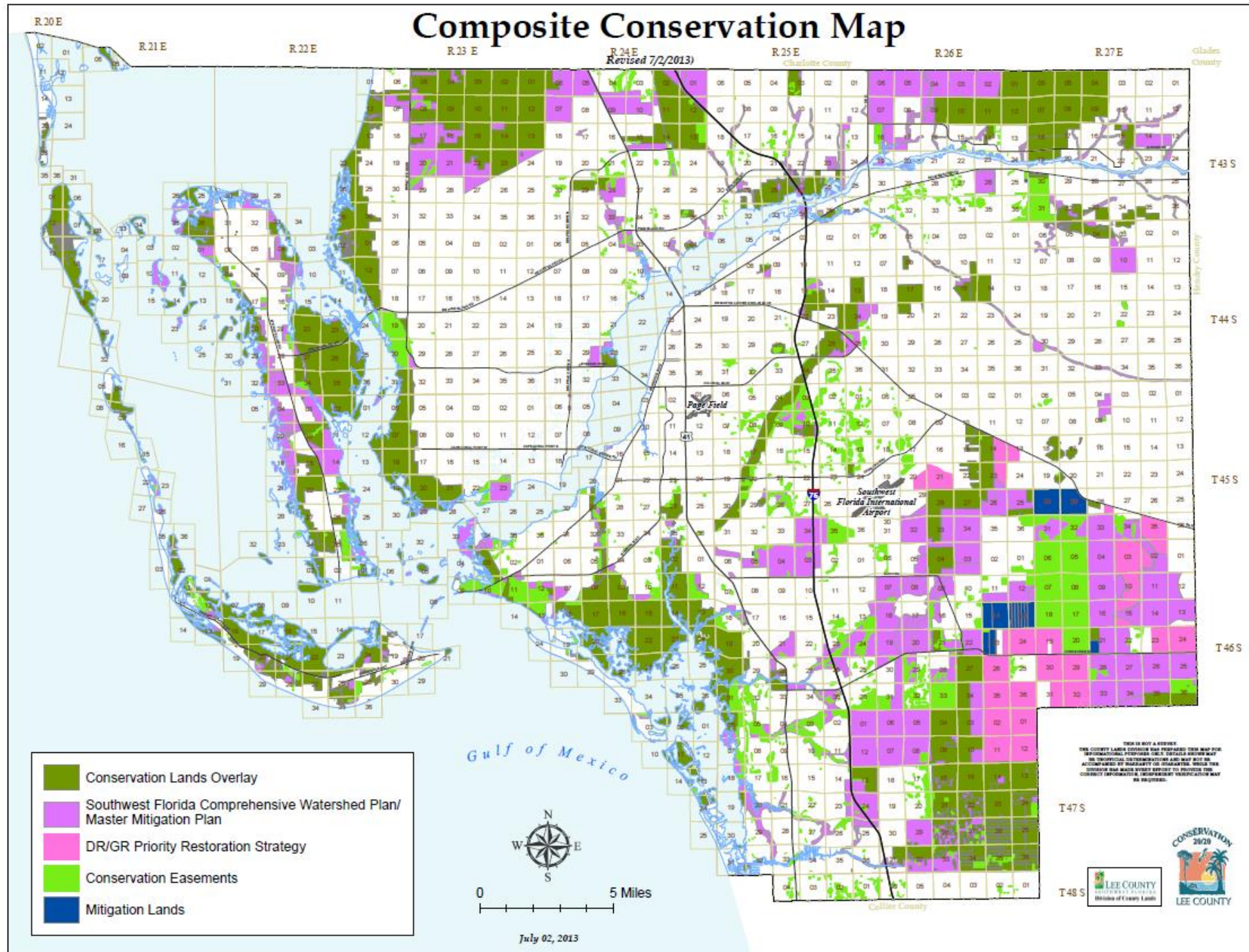
www.swfrpc.org Lee MM 3676 cons lands ease proposed L Last updated by: twalker on 8/3/2017

Updated Lee County Master Mitigation Plan (LCMMP)



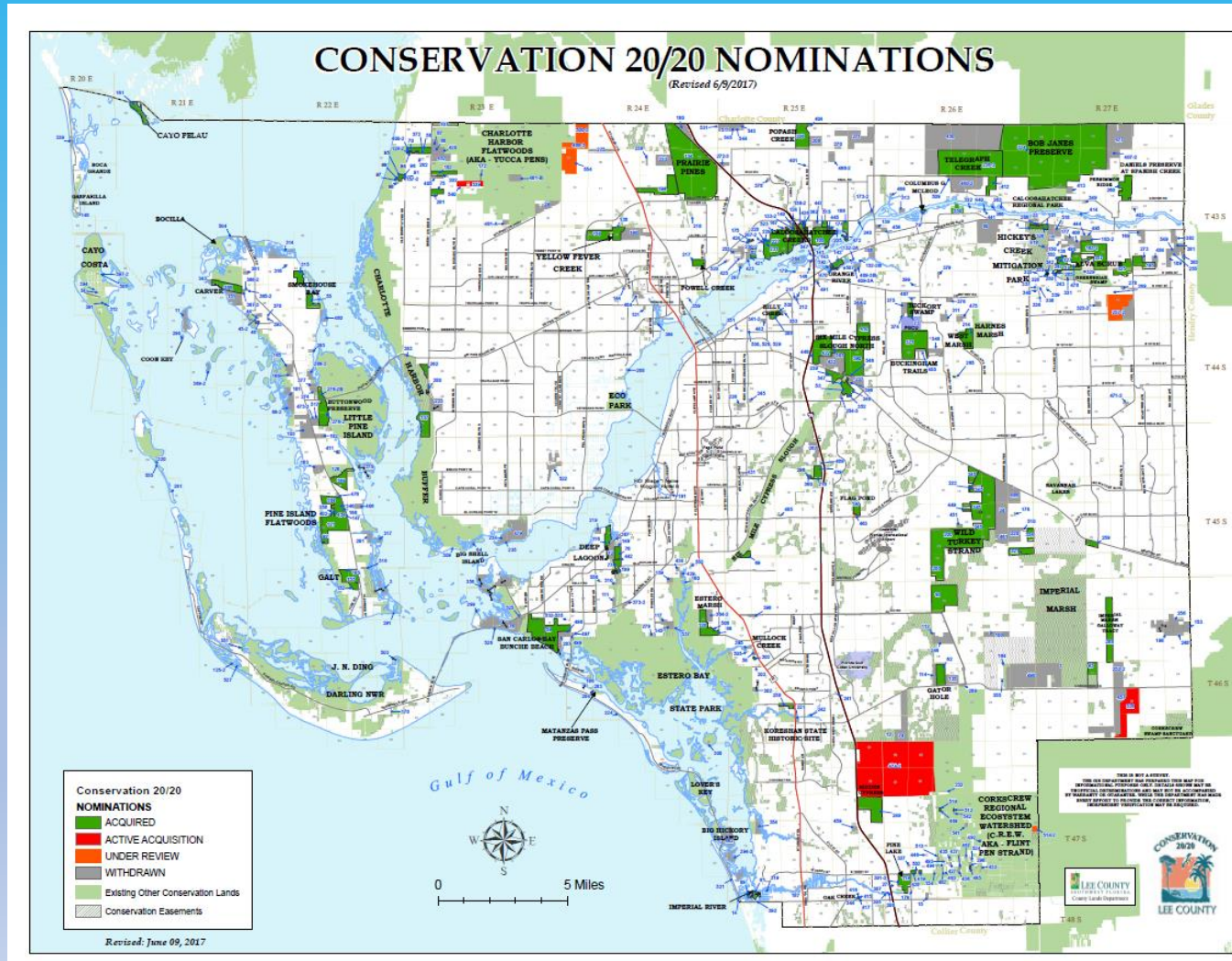
Composite Conservation Map

Revised 7/2/2013



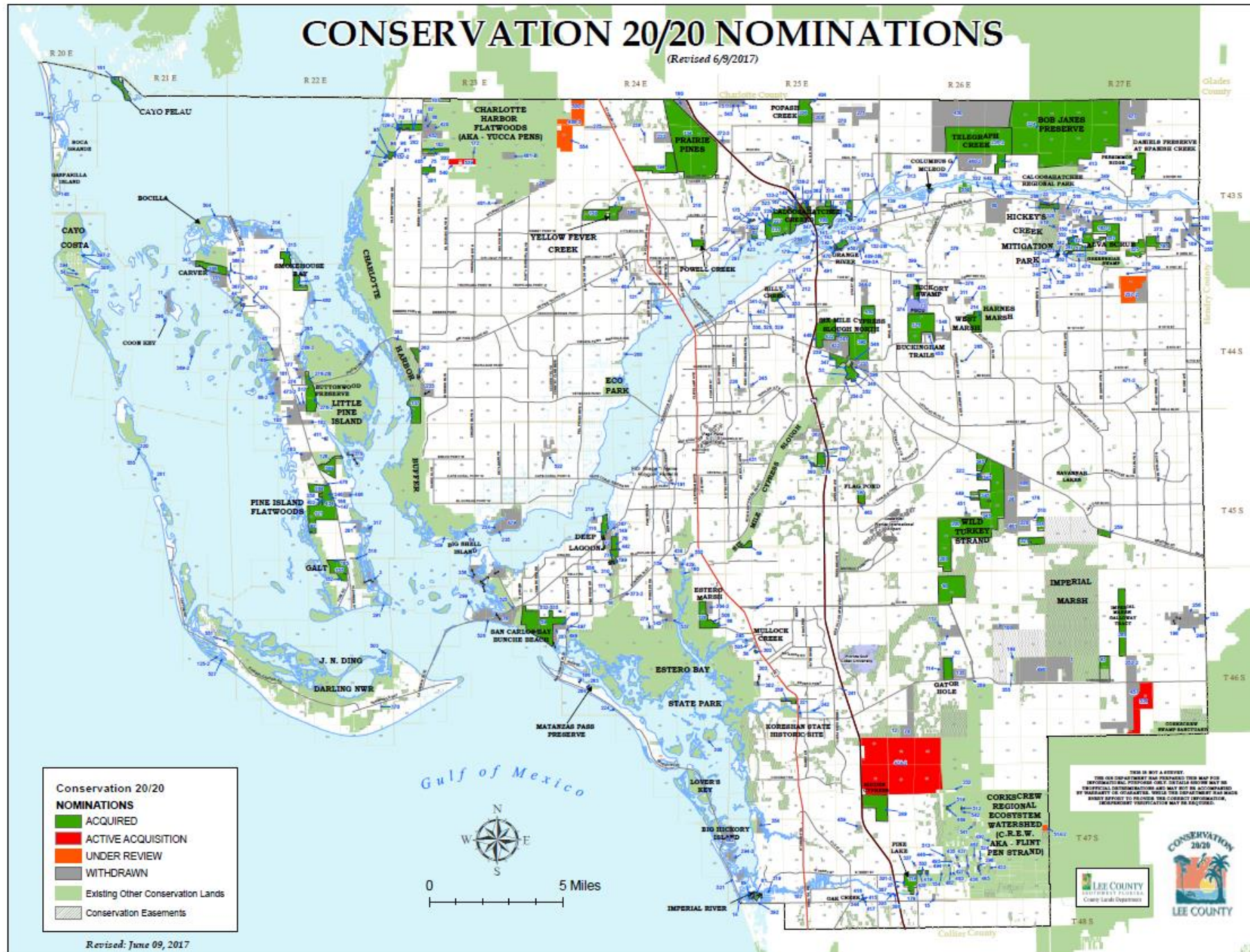
July 02, 2013

Step 5: Link proposed construction projects to conservation restoration and acquisition needs within the watersheds that the wetland impacts are occurring.



CONSERVATION 20/20 NOMINATIONS

(Revised 6/9/2017)



LEE COUNTY WATERSHED MAP

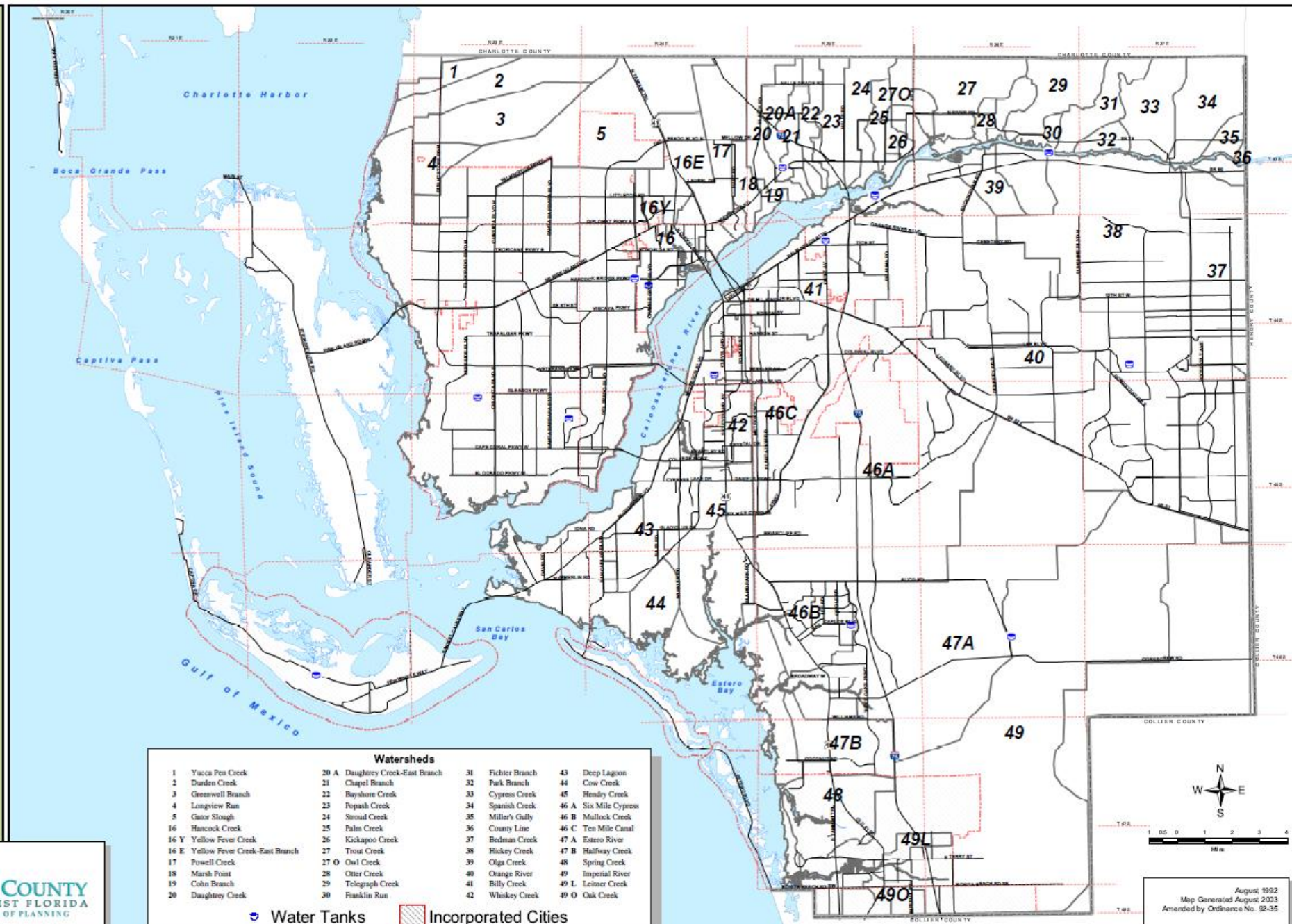
(Lee Plan Map 18)



Watersheds									
1	Yucca Pen Creek	20 A	Daughtrey Creek-East Branch	31	Fichter Branch	43	Deep Lagoon	48	
2	Darden Creek	21	Chapel Branch	32	Park Branch	44	Cow Creek	49	
3	Greenwell Branch	22	Bayshore Creek	33	Cypress Creek	45	Hendry Creek	49A	
4	Longview Run	23	Popash Creek	34	Spanish Creek	46 A	Six Mile Cypress	49B	
5	Gator Slough	24	Stroud Creek	35	Miller's Gully	46 B	Mullock Creek	49C	
16	Hancock Creek	25	Palm Creek	36	County Line	46 C	Ten Mile Canal	49D	
16 Y	Yellow Fever Creek	26	Kickapoo Creek	37	Bedman Creek	47 A	Estero River	49E	
16 E	Yellow Fever Creek-East Branch	27	Trout Creek	38	Hickey Creek	47 B	Halfway Creek	49F	
18	Powell Creek	27 O	Owl Creek	39	Oiga Creek	48	Spring Creek	49G	
19	Marsh Point	28	Otter Creek	40	Orange River	49	Imperial River	49H	
20	Cohn Branch	29	Telegraph Creek	41	Billy Creek	49 L	Leinster Creek	49I	
	Daughtrey Creek	30	Franklin Run	42	Whiskey Creek	49 O	Oak Creek		

Water Tanks

Incorporated Cities



August 1992
Map Generated August 2003
Amended by Ordinance No. 92-35

ID	Location	Acres of Impact	Watershed (s)	Watershed Names
1	3 Oaks Pkwy Ext	4.14	46A	Six-Mile Cypress
2	Alico Green Meadows	22.29	46A	Six-Mile Cypress
3	Ben Hill to Alico	5.62	46A	Six-Mile Cypress
4	Burnt Store Rd	1.68	1,2,3,4	Yucca Pen Creek, Durden Creek, Greenwell Branch, and Longview Run
5	Corkscrew Rd	8.62	47A	Estero Road
6	Diplomat Pkwy	0.09	16E	Yellow Fever Creek
7	E Terry St/Bonita Grande	8.19	49	Imperial River
8	Hanson Ext	0.13	46C	Ten-Mile Canal
9	Logan Ext	0.01	49	Imperial River
10	Luckett Ext	4.98	41	Billy's Creek
11	NE 24th Ave Ext	1.14	16E	Yellow Fever Creek
12	Seaboard St	0.55	41	Billy's Creek
13	SR 82 West	1.19	38	Hickey Creek
14	State Road 82 East	6.34	38	Hickey Creek, Bedman Creek

Watershed Names	Potential C2020 Projects	Other Mitigation Options
Bedman Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 109, 169, 255, 381,382, and 549.	Installation of wildlife undercrossing at Bedman Creek at SR 82.
Billy's Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 341-2, 351, 353, 443, 538. Restoration work on existing owned parcel 388.	Increased filter marsh locations on Billy's Creek. Source removal of the causes of bacteriological contamination.
Estero River	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 100, 112, 114, 135, 221, 242, 246, and 496. Restoration work on existing owned parcels 62, 90, 74, 200, 249, 474-2 and the recently acquired Edison Farms property.	Restoration and acquisition projects in the northern CREW
Hickey Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 23, 80, 130, 150, 177, 266,408, 273, 418, 484, 490, 518. Restoration work on existing owned parcel 57, 101, 127, 163-3, 195, 325, and 357.	Installation of wildlife undercrossing at Hickey's Creek and SR82. Expansion of the FWC Hickey's Creek Mitigation Park
Imperial River	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 15, 179, 232, 296, 327, 427, 433, 436, 437, 446, 467, 482, 492, 502, 513, 215-2, 524, 541, and 542. Restoration work on existing owned parcels 119, 249, 419, 428, and 465.	Implementation of parts of the City of Bonita Springs Flood Reduction and Watershed Restoration Plan. Restoration and acquisition projects in the southern CREW
Six-Mile Cypress	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 237, 244-2, 254-3, 267, 396, 432, 485, and 501. Restoration work on existing owned parcels 69, 216, 239, 298, 348, 352, 360, 390. 410, 422, and 439.	Restoration projects in Filter marches in major drainage ways.
Ten-Mile Canal	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 364-2. 395, 398, and 505.	Restoration and acquisition projects in the Estero Bay State Park.
Yellow Fever Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 138, 180 and 198. Restoration work on existing owned parcels 134, 156, and 194.	Restoration work in the Charlotte Harbor Flatwoods- Yucca-Panes, Babcock - Webb WMA hydrologic Restoration.
Yucca Pen Creek, Durden Creek, Greenwell Branch, and Longview Run	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 87, 86, 94, 91, 97, 98, 405, and 539. Restoration work on existing owned parcels 58, 75,95, 102, 107 and 281	Restoration projects in the FWC Yucca Pens Project; restoration work and exotic removal on the Charlotte Harbor State Park.

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2	Alico Green Meadows	22.29	46A	Six-Mile Cypress	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 237, 244-2, 254-3, 267, 396, 432, 485, and 501. Restoration work on existing owned parcels 69, 216, 239, 298, 348, 352, 360, 390. 410, 422, and 439.	Restoration projects in Filter marches in major drainage ways.
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8	Hanson Ext	0.13	46C	Ten-Mile Canal	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 364-2. 395, 398, and 505.	Restoration and acquisition projects in the Estero Bay State Park.
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11	NE 24th Ave Ext	1.14	16E	Yellow Fever Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 138, 180 and 198. Restoration work on existing owned parcels 134, 156, and 194.	Restoration work in the Charlotte Harbor Flatwoods-Yucca-Panes, Babcock - Webb WMA hydrologic Restoration.
12	Seaboard St	0.55	41	Billy's Creek	Acquisition and restoration of hydrology and removal of exotics on nominated parcels 341-2, 351, 353, 443, 538. Restoration work on existing owned parcel 388.	Increased filter marsh locations on Billy's Creek. Source removal of the causes of bacteriological contamination.
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Step 6: Add the Master Mitigation Plan to the Annual Work Plan of County.



UNIFIED PLANNING WORK PROGRAM FOR FISCAL YEARS 2016/17 – 2017/18 (July 1, 2016 – June 30, 2018)

Adopted May 19, 2016
Amended June 16, 2017

LEE COUNTY METROPOLITAN PLANNING ORGANIZATION

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Federal AIG Project Number 0281 (051)
FDOT financial project number 438312-1-14-01 PL Funds
FDOT financial project number 438312-1-14-02 SU Funds
FDOT Contract Number 02861

CFDA # 20.505, Federal Transit Technical Studies Grant (Metropolitan Planning)

Step 7: Establish a Standing Coordination Team for the Mitigation Plan Implementation and Updating (including site review)



Step 8: Review and Updating of the Mitigation Plan Annually



Acknowledgements

This project has benefited from the contributions of numerous agencies and individuals that have contributed information, time, and opinion to the contents and recommendations.

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